Refine Search

Search Results -

Terms	Documents
L7 and 705/?.ccls.	0

Database:
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US Pre-Grant Publication Full-Text Database
US Patents Full-Text Database
US OCR Full-Text Database
EPO Abstracts Database
JPO Abstracts Database
Derwent World Patents Index
IBM Technical Disclosure Bulletins
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Search:
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L8
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[Refine Search]

[Recall Text ⬍]   [Clear]   [Interrupt]

Search History

DATE: Friday, November 12, 2004   Printable Copy   Create Case

Set Name side by side	Query	Hit Count	Set Name result set
	DB=PGPB; THES=ASSIGNEE; PLUR=YES; OP=OR		
L8	L7 and 705/?.ccls.	0	L8
L7	((position$ or plac$ or put$) with (access$ with (node or point)) with (fix$ or space$ or equal$) with (distance or location)) and wireless	16	L7
	DB=EPAB,JPAB,DWPI,TDBD; THES=ASSIGNEE; PLUR=YES; OP=OR		
L6	((position$ or plac$ or put$) with (access$ with (node or point)) with (fix$ or space$ or equal$) with (distance or location)) and wireless	0	L6
L5	((position$ or plac$ or put$) with (access$ with (node or point)) with (fix$ or space$ or equal$) with (distance or location)) and wireless and @pd<=20001024	0	L5
L4	((position$ or plac$ or put$) with (access$ with (node or point)) with (fix$ or space$ or equal$) with (distance or location)) and wireless and @ad<=20001024	0	L4
	DB=USPT; THES=ASSIGNEE; PLUR=YES; OP=OR		
	((position$ or plac$ or put$) with (access$ with (node or point)) with (fix$ or		

L3	space$ or equal$) with (distance or location)) and wireless and @ad<=20001024	6	L3
L2	6486768.pn.	1	L2
L1	5979757.pn.	1	L1

END OF SEARCH HISTORY

Hit List

Search Results - Record(s) 1 through 10 of 16 returned.

☐ 1.   Document ID: US 20040162084 A1

L7: Entry 1 of 16   File: PGPB   Aug 19, 2004

PGPUB-DOCUMENT-NUMBER: 20040162084
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040162084 A1

TITLE: Positioning with <u>wireless</u> local area networks and WLAN-aided global positioning systems

PUBLICATION-DATE: August 19, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Wang, Yi-Hsiu	Palo Alto	CA	US	

US-CL-CURRENT: <u>455/456.1</u>; <u>455/457</u>

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☐ 2.   Document ID: US 20040095916 A1

L7: Entry 2 of 16   File: PGPB   May 20, 2004

PGPUB-DOCUMENT-NUMBER: 20040095916
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040095916 A1

TITLE: Web-contents receiving system and apparatus for providing an access point

PUBLICATION-DATE: May 20, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Maki, Makoto	Nagoya-shi		JP	
Ishidoshiro, Takashi	Nagoya-shi		JP	

US-CL-CURRENT: <u>370/338</u>

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☐   3.   Document ID: US 20040076300 A1

L7: Entry 3 of 16   File: PGPB   Apr 22, 2004

PGPUB-DOCUMENT-NUMBER: 20040076300
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040076300 A1

TITLE: Encryption key setting system, access point, encryption key setting method, and authentication code setting system

PUBLICATION-DATE: April 22, 2004

INVENTOR-INFORMATION:
NAME	CITY	STATE	COUNTRY	RULE-47
Ishidoshiro, Takashi	Minami-ku		JP	

US-CL-CURRENT: 380/277

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☐   4.   Document ID: US 20040076144 A1

L7: Entry 4 of 16   File: PGPB   Apr 22, 2004

PGPUB-DOCUMENT-NUMBER: 20040076144
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040076144 A1

TITLE: Method for providing voice communication services and system for the same

PUBLICATION-DATE: April 22, 2004

INVENTOR-INFORMATION:
NAME	CITY	STATE	COUNTRY	RULE-47
Ishidoshiro, Takashi	Nagoya		JP	

US-CL-CURRENT: 370/352

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☐   5.   Document ID: US 20040022180 A1

L7: Entry 5 of 16   File: PGPB   Feb 5, 2004

PGPUB-DOCUMENT-NUMBER: 20040022180
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040022180 A1

TITLE: Apparatus, and associated method, for facilitating communication allocation

in a radio communication system

PUBLICATION-DATE: February 5, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Stolpman, Victor	Dallas	TX	US	
Terry, John	Garland	TX	US	

US-CL-CURRENT: 370/208; 370/338

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D |

☐   6.   Document ID: US 20040002346 A1

L7: Entry 6 of 16   File: PGPB   Jan 1, 2004

PGPUB-DOCUMENT-NUMBER: 20040002346
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040002346 A1

TITLE: Ultra-wideband geographic location system and method

PUBLICATION-DATE: January 1, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Santhoff, John	San Diego	CA	US	

US-CL-CURRENT: 455/456.1; 455/456.2, 455/456.5

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D |

☐   7.   Document ID: US 20030137453 A1

L7: Entry 7 of 16   File: PGPB   Jul 24, 2003

PGPUB-DOCUMENT-NUMBER: 20030137453
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030137453 A1

TITLE: Determining wireless device locations

PUBLICATION-DATE: July 24, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Hannah, Eric C.	Pebble Beach	CA	US	
Tennenhouse, David L.	Hillsborough	CA	US	

US-CL-CURRENT: <u>342/387</u>; <u>342/465</u>

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☐   8.   Document ID: US 20030125043 A1

· L7: Entry 8 of 16   File: PGPB   Jul 3, 2003

PGPUB-DOCUMENT-NUMBER: 20030125043
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030125043 A1

TITLE: Method and apparatus to provide guidance to support <u>wireless</u> connectivity

PUBLICATION-DATE: July 3, 2003

INVENTOR-INFORMATION:
NAME	CITY	STATE	COUNTRY	RULE-47
Silvester, Kelan C.	Portland	OR	US	

US-CL-CURRENT: <u>455/456.1</u>; <u>455/457</u>

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☐   9.   Document ID: US 20030100328 A1

L7: Entry 9 of 16   ·   File: PGPB   May 29, 2003

PGPUB-DOCUMENT-NUMBER: 20030100328
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030100328 A1

TITLE: Transmit power control for mobile unit

PUBLICATION-DATE: May 29, 2003

INVENTOR-INFORMATION:
NAME	CITY	STATE	COUNTRY	RULE-47
Klein, John	Morgan Hill	CA	US	
Montgomery, Richard	Saratoga	CA	US	
Nguyen, Dong	Sunnyvale	CA	US	
Werback, Andrew	San Jose	CA	US	
Kellogg, William	San Jose	CA	US	
Ouchida, Wayne	Mountain View	CA	US	
Melville, Graham	Morgan Hill	CA	US	

US-CL-CURRENT: <u>455/522</u>; <u>455/69</u>

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

☐   10.   Document ID: US 20030043073 A1

L7: Entry 10 of 16   File: PGPB   Mar 6, 2003

PGPUB-DOCUMENT-NUMBER: 20030043073
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030043073 A1

TITLE: Position detection and location tracking in a wireless network

PUBLICATION-DATE: March 6, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Gray, Matthew K.	Somerville	MA	US	
Peden, Jeffrey J. II	Lexington	MA	US	
Chery, Yonald	Malden	MA	US	

US-CL-CURRENT: 342/465; 342/385

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

| Clear | Generate Collection | Print | Fwd Refs | Bkwd Refs | Generate OACS |

Terms	Documents
((position$ or plac$ or put$) with (access$ with (node or point)) with (fix$ or space$ or equal$) with (distance or location)) and wireless	16

Display Format: TI   Change Format

Hit List

Search Results - Record(s) 11 through 16 of 16 returned.

☐   11.   Document ID: US 20030001776 A1

L7: Entry 11 of 16   File: PGPB   Jan 2, 2003

PGPUB-DOCUMENT-NUMBER: 20030001776
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030001776 A1

TITLE: Determining wireless device locations

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

☐   12.   Document ID: US 20020191573 A1

L7: Entry 12 of 16   File: PGPB   Dec 19, 2002

PGPUB-DOCUMENT-NUMBER: 20020191573
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020191573 A1

TITLE: Embedded routing algorithms under the internet protocol routing layer of a
software architecture protocol stack in a mobile Ad-Hoc network

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

☐   13.   Document ID: US 20020188527 A1

L7: Entry 13 of 16   File: PGPB   Dec 12, 2002

PGPUB-DOCUMENT-NUMBER: 20020188527
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020188527 A1

TITLE: Management and control of online merchandising

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

☐   14.   Document ID: US 20020080759 A1

L7: Entry 14 of 16   File: PGPB   Jun 27, 2002

PGPUB-DOCUMENT-NUMBER: 20020080759

PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020080759 A1

TITLE: <u>Wireless</u> local area network system with mobile access point station determination

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D |

☐   15.   Document ID: US 20020045455 A1
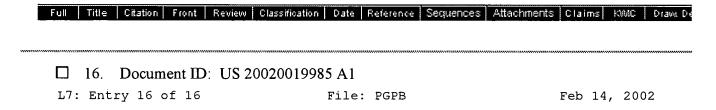
L7: Entry 15 of 16   File: PGPB   Apr 18, 2002

PGPUB-DOCUMENT-NUMBER: 20020045455
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020045455 A1

TITLE: Location data diffusion and location discovery

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D |

☐   16.   Document ID: US 20020019985 A1

L7: Entry 16 of 16   File: PGPB   Feb 14, 2002
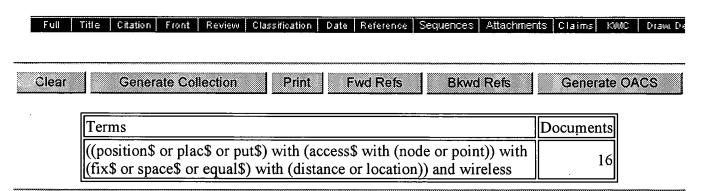
PGPUB-DOCUMENT-NUMBER: 20020019985
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020019985 A1

TITLE: Communications network with <u>wireless</u> gateways for mobile terminal access

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D |

| Clear | Generate Collection | Print | Fwd Refs | Bkwd Refs | Generate OACS |

Terms	Documents
((position$ or plac$ or put$) with (access$ with (node or point)) with (fix$ or space$ or equal$) with (distance or location)) and wireless	16

Display Format: TI | Change Format |

Previous Page   Next Page   Go to Doc#

Hit List

Search Results - Record(s) 1 through 6 of 6 returned.

☐ 1.   Document ID: US 6717926 B1

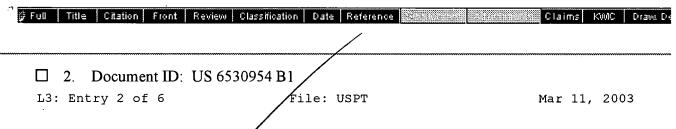L3: Entry 1 of 6   File: USPT   Apr 6, 2004

US-PAT-NO: 6717926
DOCUMENT-IDENTIFIER: US 6717926 B1

TITLE: Apparatus and associated method, by which to transmit beacon signals in a
radio communication system

Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw De

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☐ 2.   Document ID: US 6530954 B1

L3: Entry 2 of 6   File: USPT   Mar 11, 2003

US-PAT-NO: 6530954
DOCUMENT-IDENTIFIER: US 6530954 B1

TITLE: Adaptive senso-motor encoder for neuroprostheses

Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw De

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☐ 3.   Document ID: US 6477156 B1

L3: Entry 3 of 6   File: USPT   Nov 5, 2002

US-PAT-NO: 6477156
DOCUMENT-IDENTIFIER: US 6477156 B1

TITLE: Apparatus, and associated method, for selectably operating radio device in
alternate operating mode

Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw De

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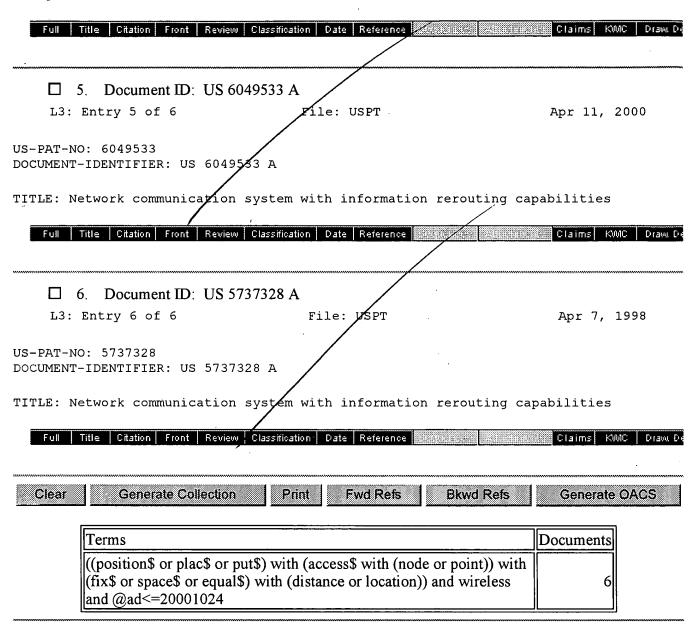☐ 4.   Document ID: US 6119096 A

L3: Entry 4 of 6   File: USPT   Sep 12, 2000

US-PAT-NO: 6119096
DOCUMENT-IDENTIFIER: US 6119096 A

TITLE: System and method for aircraft passenger check-in and boarding using iris
recognition

| Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw D |

☐ 5. Document ID: US 6049533 A

L3: Entry 5 of 6   File: USPT   Apr 11, 2000

US-PAT-NO: 6049533
DOCUMENT-IDENTIFIER: US 6049533 A

TITLE: Network communication system with information rerouting capabilities

| Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw D |

☐ 6. Document ID: US 5737328 A

L3: Entry 6 of 6   File: USPT   Apr 7, 1998

US-PAT-NO: 5737328
DOCUMENT-IDENTIFIER: US 5737328 A

TITLE: Network communication system with information rerouting capabilities

| Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw D |

| Clear | Generate Collection | Print | Fwd Refs | Bkwd Refs | Generate OACS |

Terms	Documents
((position$ or plac$ or put$) with (access$ with (node or point)) with (fix$ or space$ or equal$) with (distance or location)) and wireless and @ad<=20001024	6

Display Format: TI   Change Format

Previous Page   Next Page   Go to Doc#

L3: Entry 1 of 6   File: USPT   Apr 6, 2004

DOCUMENT-IDENTIFIER: US 6717926 B1
TITLE: Apparatus and associated method, by which to transmit beacon signals in a
radio communication system

Application Filing Date (1):
19990913

Brief Summary Text (1):
The present invention relates generally to communications in a multi-rate capable
communication system, such as a WLAN (wireless local area network) operable
generally pursuant to the IEEE 802.11 standard. More particularly, the present
invention relates to an apparatus, and an associated method, by which to broadcast
beacon signals to mobile stations operable in the radio communication system.
Broadcast of the beacon signals according to an embodiment of the present invention
facilitates efficient usage of bandwidth allocated for communication in a radio
communication system, thereby to permit increased efficiency of communications in
the radio communication system.

Brief Summary Text (9):
Conventional LANs communicate packets of data to effectuate communications therein.
Wireless networks, operable in manners analogous LANs, referred to as WLANs
(wireless local area networks) have also been developed and are utilized to
communicate data over a radio-link.

Brief Summary Text (18):
The present invention, accordingly, advantageously provides apparatus and an
associated method, by which to transmit beacon signals broadcast to mobile stations
operable in a radio communication system such as a (wireless local area network)
operable pursuant to an IEEE 802.11 standard.

Brief Summary Text (22):
An embodiment of the present invention is operable in any of various communication
systems. In the exemplary implementation, an embodiment of the present invention is
operable in a (wireless local area network) constructed pursuant to the IEEE 802.11
standard. As set forth in the standard for WLAN activity at a MAC (medium access
control) layer, beacon signals are caused to be broadcast at beacon intervals. In
operation of an embodiment of the present invention, the point coordination
function selects the data rate at which a beacon signal is to be broadcast
responsive to the capabilities of the mobile stations which are to communicate data
during the contention free period by providing such data rates selectability to the
beacon signals, the contention free period can be used more efficiently, thereby to
permit increased efficiency of communications in the communication system.

Detailed Description Text (2):
Referring first to FIG. 1, a communication system, shown generally at 10, provides
for radio communications with a plurality of mobile stations 12, here identified by
12-1 through 12-N. The communication system is a multi-rated system in which
different ones of the mobile stations might be operable at different data rates. In
the exemplary implementation, the communication system 10 forms a WLAN (wireless
local area network) operable generally pursuant to the standards set forth in the

IEEE 802.11 standards, as presently-promulgated. As defined in such specification, multi-user, multi-rate communications are provided with the mobile stations 12. Other types of radio communication systems can similarly be illustrated. And, other embodiments of the present invention are operable in such other communication systems.

Detailed Description Text (3):
A single access point 14 is shown in the Figure. In an actual implementation, the WLAN of which the communication system is formed typically includes a plurality of access points positioned at spaced-apart locations to encompass an area in which radio communications are to be provided pursuant to the WLAN. While the term access point 14 shall be used herein as such term is used in the aforementioned IEEE 802.11 standard, and other communication systems, structure corresponding to the access point 14 is sometimes referred to as a base station or RAD (remote antenna device).

L3: Entry 3 of 6   File: USPT   Nov 5, 2002

US-PAT-NO: 6477156
DOCUMENT-IDENTIFIER: US 6477156 B1

TITLE: Apparatus, and associated method, for selectably operating radio device in alternate operating mode

DATE-ISSUED: November 5, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ala-Laurila; Juha	Tampere			FI
Hansen; Harri	Tampere			FI

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Nokia Corporation	Espoo			FI	03

APPL-NO: 09/ 342367   [PALM]
DATE FILED: June 29, 1999

INT-CL: [07] H04 Q 7/24

US-CL-ISSUED: 370/331; 370/338, 370/465, 455/436
US-CL-CURRENT: 370/331; 370/338, 370/465, 455/436

FIELD-OF-SEARCH: 455/552, 455/436, 455/432, 455/434, 455/435, 455/450, 455/517, 370/329, 370/395.42, 370/395.5, 370/466, 370/486, 370/331-333, 370/522, 370/231, 370/235-236, 370/389, 370/396, 370/450, 370/506, 370/338, 370/401, 375/341, 375/262, 375/231, 375/233, 375/43.6, 375/232, 371/43.6

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected   Search ALL   Clear

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	5077732	December 1991	Fischer et al.	370/85.4
☐	5621894	April 1997	Menezes et al.	395/200.12
☐	5706428	January 1998	Boer et al.	395/200
☐	5912885	June 1999	Mitts et al.	370/331
☐	5960344	September 1999	Mahany	455/432

☐   <u>5963599</u>   October 1999   Curtis et al.   375/341

☐   <u>6243778</u>   June 2001   Fung et al.   710/113

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
0494576	July 1992	EP	
0652668	May 1995	EP	
0767548	April 1997	EP	
WO98/27747	June 1998	WO	

ART-UNIT: 2664

PRIMARY-EXAMINER: Ngo; Ricky

ABSTRACT:

Apparatus, and an associated method, for identifying whether a mobile terminal and access point of a WLAN (<u>wireless</u> local area network) are capable of operation pursuant to a proprietary communication mode. If a determination is made that the communication pair is capable of operation pursuant to the proprietary communication mode, the mobile terminal is instructed to operate pursuant to the proprietary communication mode. Handover procedures are also provided by which better to assure that ongoing communications, during and subsequent to handover shall also be effectuated pursuant to the proprietary communication mode. Improved communication quality when the communication pair is operated pursuant to the proprietary communication mode relative to operation pursuant to a conventional IEEE 802.11 communication mode is possible.

19 Claims, 4 Drawing figures

L3: Entry 3 of 6   File: USPT   Nov 5, 2002

DOCUMENT-IDENTIFIER: US 6477156 B1
TITLE: Apparatus, and associated method, for selectably operating radio device in
alternate operating mode

Abstract Text (1):
Apparatus, and an associated method, for identifying whether a mobile terminal and
access point of a WLAN (wireless local area network) are capable of operation
pursuant to a proprietary communication mode. If a determination is made that the
communication pair is capable of operation pursuant to the proprietary
communication mode, the mobile terminal is instructed to operate pursuant to the
proprietary communication mode. Handover procedures are also provided by which
better to assure that ongoing communications, during and subsequent to handover
shall also be effectuated pursuant to the proprietary communication mode. Improved
communication quality when the communication pair is operated pursuant to the
proprietary communication mode relative to operation pursuant to a conventional
IEEE 802.11 communication mode is possible.

Application Filing Date (1):
19990629

Brief Summary Text (1):
The present invention relates generally to communications in a radio communication
system, such as a WLAN (wireless local area network). More particularly, the
present invention relates to apparatus, and an associated method, by which to
identify whether proprietary WLAN radio functions are available to a mobile
terminal-access point pair and to activate proprietary WLAN radio functions if such
availability is identified. Performance of proprietary WLAN radio functions permits
improved communication quality, such as improved handover performance, relative to
conventional WLAN operation pursuant, e.g., to the IEEE 802.11 standard.

Brief Summary Text (7):
Several analogous types of wireless communication systems have been implemented,
and others have been proposed, to encompass limited areas, such as the area
encompassed by a building structure or office workplace. Wireless communication
systems sometimes referred to as microcellular networks, private networks, and
WLANs (wireless local area networks) are exemplary of such systems.

Brief Summary Text (8):
Wireless communication systems are typically constructed pursuant to standards
promulgated by a regulatory or quasi-regulatory body. For instance, the IEEE 802.11
standard promulgated by the IEEE (Institute of Electrical and Electronic
Engineering) is a wireless LAN standard pertaining generally to the commercial 2.4
GHz wireless LAN (local area network). The 802.11 standard specifies an over-the-
air interface between a wireless client, e.g, a mobile terminal, and a base station
or access point, as well as among wireless clients. Standards pertaining to a
physical layer and an MAC (media access control) layer are set forth in such
standard. The standard permits automatic medium sharing between different devices
which includes compatible physical layers. Asynchronous data transfer is provided
for in the standard, generally by way of the MAC layer which utilizes a CSMA/CA
(carrier sense multiple access with collision avoidance) communication scheme.

Brief Summary Text (9):
While the IEEE 802.11 standard provides for wireless communications through the use
of mobile terminals constructed to be operable pursuant to such standard, the
standard does not adequately provide for real time wireless services. For instance,
in the current implementation of the standard, a significant loss of quality is
sometimes experienced during handover of communications from one access point to
another. Excessive numbers of data frames are susceptible to being lost or delayed,
resulting in the loss of communication quality or even termination of
communications.

Brief Summary Text (10):
Operational modes different than that set forth in the IEEE 802.11 standard are
therefore required, particularly for real time wireless services. Proprietary
functions have been proposed which permit improved quality of communications
compared to operation pursuant to the existing IEEE 802.11 standard. Access points
and mobile terminals operable to perform such proprietary functions are referred to
as being proprietary mode capable.

Brief Summary Text (14):
It is in light of this background information related to wireless communications
that the significant improvements of the present invention have evolved.

Detailed Description Text (2):
Referring first to FIG. 1, a communication system, shown generally at 10, provides
for radio communications with mobile terminals, of which the mobile terminal 12 is
exemplary, therein. In the exemplary implementation, the communication system 10
forms a WLAN (wireless local area network) which provides for radio communications
with the mobile terminal as set forth in the IEEE 802.11 standard as well,
potentially, pursuant to a proprietary mode of operation. Other communication
systems can analogously be represented, and operation of an embodiment of the
present invention is analogously also operable in such other communication systems.

Detailed Description Text (3):
In conventional manner, the WLAN includes a plurality of spaced-apart access points
(APs) 14 positioned at spaced-apart locations. Two access points are shown in the
Figure. In an actual WLAN, typically, in greater numbers of access points 14 are
utilized. The access points 14 are sometimes referred to as base stations or RADs
(remote antenna devices). The term "access point" shall generally be used herein to
identify such devices as the devices form the points of access to the network
infrastructure of the communication system.

Detailed Description Text (7):
As noted above, because of various deficiencies of the IEEE 802.11 standard,
communication quality of communications between the mobile terminal and an access
point during the effectuation of, e.g., real time wireless services, the
proprietary mode of operation, if available, is preferred to operation pursuant to
the conventional IEEE 802.11 standard. However, effectuation of communication
between a mobile terminal and an access point pursuant to the proprietary mode of
operation requires that both the access point and the mobile terminal be operable
pursuant to such proprietary mode. Operation of an embodiment of the present
invention identifies whether both of the elements of the communication pair, i.e.,
the access point and the mobile terminal are together operable pursuant to the
proprietary mode. When both elements of the communication pair are identified as
being proprietary mode capable, effectuation of communication pursuant to the
proprietary mode is permitted.

CLAIMS:

8. The apparatus of claim 1 wherein the radio communication system comprises a WLAN (wireless local area network), wherein the first communication mode comprises a standard IEEE 802.11 ("802.11") communication mode and the second communication mode comprises non802.11 communication mode, wherein the identifiers that identify each of the mobile terminal and the at least one access point comprise EUI-64 MAC addresses and wherein said comparator is coupled to receive indications of the EUI-64 MAC address identifying the mobile terminal and indications of the EUI-64 MAC address identifying the access point.

Refine Search

Search Results -

Terms	Documents
L36 and (venue or shop$ or store)	3

Database:

```
US Pre-Grant Publication Full-Text Database
US Patents Full-Text Database
US OCR Full-Text Database
EPO Abstracts Database
JPO Abstracts Database
Derwent World Patents Index
IBM Technical Disclosure Bulletins
```

Search: L37

[Refine Search]

[Recall Text] [Clear] [Interrupt]

Search History

DATE: Friday, November 12, 2004   Printable Copy   Create Case

Set Name side by side	Query	Hit Count	Set Name result set
DB=EPAB,JPAB,DWPI,TDBD; THES=ASSIGNEE; PLUR=YES; OP=OR			
L37	L36 and (venue or shop$ or store)	3	L37
L36	prox$ and access$ and (point or location or node) and @pd<=20001024 and wireless$	20	L36
DB=USPT; THES=ASSIGNEE; PLUR=YES; OP=OR			
L35	L33 and l29	0	L35
L34	L33 and l30	0	L34
L33	L31 and (venue and shop$)	2	L33
L32	L31 and (venue or shop$)	78	L32
L31	L28 and wireless	78	L31
L30	L28 and wireless$ and 705/26,27.ccls.	4	L30
L29	L28 and 705/26,27.ccls.	5	L29
L28	L25 and ((fix$ or equal$) with (spac$ or distanc$)) and (venue or shop$)	634	L28
L27	L26 and l25	244	L27

L26	705/?.ccls.	2464	L26
L25	prox$ and access$ and (point or location or node) and @ad<=20001024	96074	L25
L24	L19 and (height or altitud$)	2	L24
L23	L22 and (height or altitud$)	0	L23
L22	map$ and (rating with information) and (digital adj2 compass$) and @ad<=20031212	1	L22
L21	map$ and (rat$ with service) and (digital adj2 compass$) and @ad<=20031212	0	L21
L20	L19 and (digital adj2 compass$)	0	L20
L19	6516268.pn. or 6813559.pn. or 6678750.pn. 6677794.pn. or 5825283.pn.	5	L19

DB=PGPB; THES=ASSIGNEE; PLUR=YES; OP=OR

L18	6516268.pn. or 6813559.pn. or 6678750.pn. 6677794.pn. or 5825283.pn.	0	L18
L17	L13 not l14	6	L17
L16	L14 not l13	3	L16
L15	L14 and l13	0	L15
L14	mapquest$ and palm$ and (target$ with (area or zone or location)) and address and database and @ad<=20030110	3	L14
L13	distance and (optim$ with (route or street or road)) and mapquest$ and @ad<=20030211	6	L13
L12	L1	0	L12
L11	L6	0	L11
L10	L7	0	L10
L9	L8	0	L9

DB=EPAB,JPAB,DWPI,TDBD; THES=ASSIGNEE; PLUR=YES; OP=OR

L8	L7 and location	3	L8
L7	L6 and multi$	33	L7
L6	distance and (optim$ with (route or street or road)) and @pd<=20030211	421	L6
L5	distance and (optim$ with (route or street or road)) and mapquest$ and @pd<=20030211	0	L5

DB=USPT; THES=ASSIGNEE; PLUR=YES; OP=OR

L4	L3 and multi$	1	L4
L3	6163749.pn.	1	L3
L2	L1 and look$	0	L2
L1	distance and (optim$ with (route or street or road)) and mapquest$ and @ad<=20030211	3	L1

END OF SEARCH HISTORY

Hit List

| Clear | Generate Collection | Print | Fwd Refs | Bkwd Refs |

| Generate OACS |

Search Results - Record(s) 1 through 3 of 3 returned.

☐ 1.   Document ID: WO 9908429 A1

Using default format because multiple data bases are involved.

L37: Entry 1 of 3   File: EPAB   Feb 18, 1999

PUB-NO: WO009908429A1
DOCUMENT-IDENTIFIER: WO 9908429 A1
TITLE: A DISTRIBUTED SYSTEM AND METHOD FOR PREFETCHING OBJECTS

PUBN-DATE: February 18, 1999

INVENTOR-INFORMATION:

NAME   COUNTRY

CARNEAL, BRUCE L

FISH, RAM A

GURALNICK, JEREMY

INT-CL (IPC): H04 L 29/08; G06 F 17/30
EUR-CL (EPC): G06F017/30; H04B007/185, H04L029/06

| Full | Title | Citation | Front | Review | Classification | Date | Reference | | | | Claims | KWIC | Draw De |

☐ 2.   Document ID: NNRD428118

L37: Entry 2 of 3   File: TDBD   Dec 1, 1999

TDB-ACC-NO: NNRD428118

DISCLOSURE TITLE: Customer Premises Equipment Providing Wireless Clients Access to
Consolidated Broadband Services

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reserved.

| Full | Title | Citation | Front | Review | Classification | Date | Reference | | | | Claims | KWIC | Draw De |

☐ 3.   Document ID: US 5108052 A

L37: Entry 3 of 3   File: DWPI   Apr 28, 1992

DERWENT-ACC-NO: 1992-166129
DERWENT-WEEK: 199220
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TITLE: Passenger transportation system for self-guided vehicle - with passenger able to enter at any station, by ticket via ATM and input destination before transport on track system

| Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw De |

| Clear | Generate Collection | Print | Fwd Refs | Bkwd Refs | Generate OACS |

Terms	Documents
L36 and (venue or shop$ or store)	3

Display Format: |- | Change Format |

Previous Page   Next Page   Go to Doc#

L37: Entry 1 of 3   File: EPAB   Feb. 18, 1999

PUB-NO: WO009908429A1
DOCUMENT-IDENTIFIER: WO 9908429 A1
TITLE: A DISTRIBUTED SYSTEM AND METHOD FOR PREFETCHING OBJECTS

PUBN-DATE: February 18, 1999

INVENTOR-INFORMATION:
NAME   COUNTRY
CARNEAL, BRUCE L
FISH, RAM A
GURALNICK, JEREMY

ASSIGNEE-INFORMATION:
NAME   COUNTRY
TACHYON INC   US

APPL-NO: US09816353
APPL-DATE: August 5, 1998

PRIORITY-DATA: US05484797P (August 6, 1997)

INT-CL (IPC): H04 L 29/08; G06 F 17/30
EUR-CL (EPC): G06F017/30; H04B007/185, H04L029/06

ABSTRACT:

CHG DATE=20031203 STATUS=O>In an internet access system which includes a satellite
link, a distributed proxy server (68) is provided which reduces a delay associated
with the retrieval of inline objects of web pages. The distributed proxy server
(68) includes an access point component (70) and a satellite gateway component
(72). The access point component (70) runs on the client (browser) side of the
satellite link and communicates with web browsers (20A-20N). The satellite gateway
component (72) runs on the internet side of the satellite link and communicates
with web servers (26). As a web page is retrieved over the satellite link, the
satellite gateway component (72) parses the base file component of the web page to
identify any references to inline objects of the web page, and prefetches each such
inline object. The distributed proxy server thereby eliminates the delays normally
associated with (a) waiting for the web browser (20) to receive the base component
and request the object(s), and (b) waiting for the browser's object request(s) to
be transmitted over the satellite link. The prefetched objects are transmitted over
the satellite link to the access point component (70), which in-turn stores the
prefetched objects in an object cache (71). When a web browser (20) requests an
inline object, the access point component (70) checks the cache (71), and if the
object resides therein, returns the object to the browser (20) without forwarding
the object request over the satellite link. Traffic over the forward satellite link
is thus reduced. The method implemented by the distributed proxy server (68) can
also be used to reduce delays and traffic over other types of links, including non-
wireless links.

☐ Generate Collection   Print

L37: Entry 2 of 3   File: TDBD   Dec 1, 1999

TDB-ACC-NO: NNRD428118

DISCLOSURE TITLE: Customer Premises Equipment Providing Wireless Clients Access to Consolidated Broadband Services

PUBLICATION-DATA:
IBM technical Disclosure Bulletin, December 1999, UK

ISSUE NUMBER: 428
PAGE NUMBER: 1682

PUBLICATION-DATE: December 1, 1999 (19991201)

CROSS REFERENCE: 0374-4353-0-428-1682

DISCLOSURE TEXT:

Disclosed is equipment that connects wireless devices on the customer premises to a broadband network using standard wireless protocols. A preferred embodiment uses the wireless protocols defined by the Bluetooth (TM) Special Interest Group; see www.bluetooth.com for details. The term "broadband network" includes, but is not limited to, the cable television cable plant, asymmetrical digital subscriber line (ADSL) connected to a telephone/carrier's local loop, digital satellite television transmissions, and wireless bypass to a local carrier's point of presence using a broadband wireless technology such as LMDS.

☐ Generate Collection   Print

L1: Entry 1 of 1   File: USPT   Nov 9, 1999

US-PAT-NO: 5979757
DOCUMENT-IDENTIFIER: US 5979757 A

TITLE: Method and system for presenting item information using a portable data
terminal

DATE-ISSUED: November 9, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Tracy; William X.	Floral Park	NY		
Roslak; Thomas K.	Eastport	NY		
Murrah; Judith	St. James	NY		
Riso; Francis	Setauket	NY		
Beach; Robert	Los Altos	CA		
Sandler; Robert	Holtsville	NY		
Klein; John	Morgan Hill	CA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Symbol Technologies, Inc.	Holtsville	NY			02

APPL-NO: 08/ 771463   [PALM]
DATE FILED: December 20, 1996

PARENT-CASE:
RELATED APPLICATIONS This application is a continuation-in-part of U.S. patent
application Ser. No. 08/706,579 entitled "DEVICE AND METHOD FOR SECURE DATA UPDATES
IN A SELF-CHECKOUT SYSTEM" filed on Sep. 5, 1996, currently pending, and is related
to pending United States patent application entitled "INTRANET SCANNING TERMINAL
SYSTEM" filed on Dec. 20, 1996.

INT-CL: [06] G06 K 7/10

US-CL-ISSUED: 235/383; 235/472.01, 235/385, 705/27, 186/56
US-CL-CURRENT: 235/383; 186/56, 235/385, 235/472.01, 705/27

FIELD-OF-SEARCH: 235/383, 235/472, 235/385, 235/472.01, 705/708, 705/410, 705/16,
705/27, 705/26, 186/52, 186/56, 186/61

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

| | Search Selected | Search ALL | Clear |

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	4628193	December 1986	Blum	235/375
☐	4766295	August 1988	Davis et al.	235/383
☐	4882724	November 1989	Vela et al.	364/401
☐	5186281	February 1993	Jenkins	186/55
☐	5221838	June 1993	Gutman et al.	235/379
☐	5250789	October 1993	Johnsen	235/383
☐	5310997	May 1994	Roach et al.	235/375
☐	5334821	August 1994	Campo et al.	235/380
☐	5345071	September 1994	Dumont	235/383
☐	5361871	November 1994	Gupta et al.	235/383
☐	5393965	February 1995	Bravman et al.	235/383
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☐	5418713	May 1995	Allen	364/403
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☐	5434394	July 1995	Roach et al.	235/375
☐	5448471	September 1995	Deaton et al.	364/401
☐	5457307	October 1995	Dumont	235/383
☐	5463209	October 1995	Figh et al.	235/383
☐	5467474	November 1995	Ackerman et al.	395/800
☐	5468942	November 1995	Oosterveen et al.	235/383
☐	5478989	December 1995	Shepley	235/375
☐	5493107	February 1996	Gupta et al.	235/383
☐	5539393	July 1996	Barford	340/825.52
☐	5557088	September 1996	Shimizu et al.	235/383
☐	5583487	December 1996	Ackerman et al.	340/825.35
☐	5595264	January 1997	Trotta, Jr.	235/383
☐	5619416	April 1997	Kosarew	364/478.13
☐	5679943	October 1997	Schultz et al.	235/472
☐	5751257	May 1998	Sutherland	345/2

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
619662A2	March 1994	EP	
697793A2	February 1996	EP	

744856A2   November 1996   EP
9002296   October 1990   NL
WO90/16033   December 1990   WO

OTHER PUBLICATIONS

The Wireless Store, The Strategic Enviroment for Retailing's Future (Symbol
Technologies Brochure) Jan. 1992, p. 15.

ART-UNIT: 286

PRIMARY-EXAMINER: Hajec; Donald

ASSISTANT-EXAMINER: Rodriguez; Douglas X.

ATTY-AGENT-FIRM: Premutico; Mauro

ABSTRACT:

The present invention relates to an improved portable shopping system. The system
is provided with improved data presentation system for presenting customer desired
data on a portable terminal. The portable terminal includes audio as well as video
presentation means which are used to provide customer specific marketing files to
promote the sale of identified items.

16 Claims, 14 Drawing figures

L30: Entry 3 of 4   File: USPT   Nov 9, 1999

DOCUMENT-IDENTIFIER: US 5979757 A
TITLE: Method and system for presenting item information using a portable data terminal

Abstract Text (1):
The present invention relates to an improved portable shopping system. The system
is provided with improved data presentation system for presenting customer desired
data on a portable terminal. The portable terminal includes audio as well as video
presentation means which are used to provide customer specific marketing files to
promote the sale of identified items.

Application Filing Date (1):
19961220

Brief Summary Text (2):
This invention relates generally to an improved portable data terminal and a system
for communicating information over a wireless communication network using the
portable terminal.

Brief Summary Text (4):
The use of data collecting portable computing terminals such as the PPT 4100 and
the PPT 4600 manufactured by Symbol Technologies, Inc., the assignee of the present
invention, has been adopted in many commercial applications. These terminal systems
may include integrated bar code readers which permit the collection, storage and
distribution of a high volume of data without the need for extensive keypad data
entry. These terminal systems also provide full computing capabilities using
standard PC architectures. These terminal systems may also be provided with
wireless communication radio systems such as Symbol Technologies, Inc. local area
network radio system "SPECTRUM24.TM.". The SPECTRUM24.TM. radio network system
permits hand-held terminals to share and retrieve data in the proximity of local
area networks with a central host.

Brief Summary Text (9):
It is a further object of the present invention to provide a standardized system
for presenting data at a portable terminal by retrieving associated data files
stored at remote addresses by employing a wireless communication network. In a
preferred embodiment, the portable terminal employs a relatively simple
microprocessor and system architecture while providing full graphics and audio
support.

Brief Summary Text (10):
It is a further object of the present invention to provide improved access to
generally available multi-media data files associated with an item identified by a
portable terminal.

Brief Summary Text (12):
In a preferred embodiment of the present invention, a portable terminal having an
integrated machine code reader and a radio is provided with a graphical user
interface such as a "web browser." The terminal is provided with a display for
illustrating help and instructional files associated with a selected item

identified with the machine code reader. Thus, a warehouse clerk who reads a bar code from a box of potato chips will automatically retrieve from the central host an instruction file instructing the person where to forward the package, or in an alternative embodiment, an airplane mechanic will be provided with repair instructions from a central host for an engine part which is marked with a machine readable code. In an alternative embodiment, a consumer using a hand-held terminal in a self-scanning application of the present invention (sometimes referred to as self-shopping or self-checkout) receives marketing, pricing, and additional information from a central host for products she has scanned with her portable terminal.

Brief Summary Text (13):
The information downloaded to the hand-held terminal can be presented in any number of forms. The data can be presented in the form of a still picture, text, audio or as video. As a result, a mechanic unknown to the manufacture using an open standard communications network and a generic hand terminal can download a video image of an engine part and a video clip for the part providing instructions on its removal and repair. The use of standard data protocols such as those used currently on the Internet permit wide area accessibility over commercial and closed communication networks on any number of hardware platforms.

Brief Summary Text (14):
A preferred alternative embodiment of the present invention includes machine readable coded labels having one or more remote file location, such as uniform resurrect locators ("URLS") used to reference sites on the world wide web. These URLs are used by the portable terminal to retrieve data files including items such as prices, nutritional data, coupon availability, promotions, marketing data and general interest data from various local and remote addresses available over a wireless communication network. The machine coded labels are preferably encoded with a high-density bar code such as PDF417. These URLs can be presented on the terminal display in the form of a hyperlink which submits a data retrieval request to a remote address upon selection. The displayed hyperlink could be presented on the display as either a direct address (URL) or a highlighted title for the address.

Drawing Description Text (12):
FIG. 10 is a flow chart of a home shopping delivery system employing a preferred embodiment of the present invention.

Detailed Description Text (3):
The portable terminal of the present invention employs a wireless communication radio for communicating data to a central computer over a wireless communication network. The network could be either a local area network ("LAN"), such as Symbol's SPECTRUM24.TM. spread spectrum frequency hopping communication network, or a wide area communication network system ("WAN") such as those employing a cellular digital packet data (CDPD) communication protocol, or a combination of LAN and WAN systems.

Detailed Description Text (5):
The present invention will be described in terms of an improved portable shopping system in a retail facility. However, as noted above, it will be understood by those skilled in the art that the present invention may be utilized in any data collection environment in which data is communicated from a central host to an end user employing a portable data collection terminal.

Detailed Description Text (8):
In a preferred embodiment, the terminal 70 is also provided with a limited number of activation buttons 76, 77 and 78 for performing various user functions. In the context of a preferred portable shopping system, the portable terminal includes a "plus" key to "add" an item selected by a consumer to a list of purchased items, a

"minus" key to "delist" a previously selected item from the purchase list which is to be returned to the shelves of the store, and an "equals" key to display the total cost of the items selected for purchase.

Detailed Description Text (9):
In a preferred embodiment of the present invention, the terminal 70 is provided with a voice communication system including a microphone 71 and a speaker 74. This voice communication system may be used to obtain assistance from a store operator or to transmit audio data broadcast by the central host, i.e., "Please proceed to the store checkout center, the store will close in ten minutes" or "Soda is on sale for 89 cents in aisle five." Video messages may also be transmitted to the video display 72. In order to protect consumers in retail facilities from unwanted commercial transmissions, the terminal is also provided with a commercial transmission "on/off" button 79. This button disables transmission of broadcast audio and/or video commercials to consumers during their shopping trips. Preferably, the "off" button will not disengage the transmission of urgent messages such as a lost child notice, an emergency notice, or as described further below, a specified preference information message. In addition, the voice system on the portable terminal may also be used to provide voice activated control commands on the portable terminal.

Detailed Description Text (10):
Collection of data is preferably performed by a bar code scanner 75. Preferably the scanner will be able to read one and two dimensional bar codes such as the ubiquitous UPC code and PDF 417 code. In an alternative embodiment of the present invention, the scanner is detachable from the terminal so that the terminal may be attached to a shopping cart with a shopping cart cradle and the scanner can be detached for use by the consumer. The scanner could be provided with either a short range radio link and its own battery supply or a wired connection. In the event the products selected by the customer also bear electronic article surveillance (EAS) tags, the terminal may also be provided with a deactivation circuit which is activated when the product is scanned for purchase and deactivation prior to the product being delisted from the consumer's shopping list. An example of such an activation/deactivating system is described in pending U.S. patent application Ser. No. 07/919,410 filed on Jul. 27, 1992 which is assigned to Symbol Technologies, Inc. The EAS tags are preferably used on a limited number of restricted sales items so that the EAS tags will be deactivated/activated only upon determination that the selected item is available for purchase by the customer at that specified time and place.

Detailed Description Text (11):
The portable terminal 70 communicates with a central host through a wireless radio 80. In a preferred embodiment of the present invention, the radio 80 is a Symbol SPECTRUM24.TM. PCMCIA type II card communicating over a local area network employing a frequency-hopping communication system conforming to Draft D5 of IEEE proposed standard 802.11. The standard is available from IEEE Standards Department, 445 Hoes Lane, P.O. Box 1331, Piscataway, N.J. 08855-1331. The standard is incorporated herein by reference and shall not be further discussed. The system employs data throughput of at least one mega bit per second. Depending on the volume of data being transmitted, discrete communication systems such as SPECTRUM ONE.RTM., also available from Symbol Technologies, Inc., may also be used. Moreover, many other frequency bands and data encoding schemes could be employed which provide adequate bandwidth and security.

Detailed Description Text (12):
The ergonomic design of the portable terminal shown in FIG. 2 permits a consumer to use the terminal in either horizontal configuration along line A--A, or in a vertical configuration relative to line A--A. The terminal is provided with a reconfiguration key setting which permits the video system to automatically reconfigure its display to reflect the user's preference. The reconfiguration key

79A will automatically reconfigure the video display to change the display
configuration from the first configuration, e.g., landscape, to a second
configuration, e.g., portrait. The reconfiguration function permits a facility to
connect the portable terminal to a fixed station in more than one arrangement.
Thus, depending on space requirements, the portable terminal may be used as part of
a kiosk to provide a fixed station for presenting pricing data, advertising and
customer assistance.

Detailed Description Text (16):
In the preferred embodiment illustrated in FIG. 1, portable terminals 12A, 12B,
12C, 12D and 12E in location 10 communicate to a central host 14 through multi-
access points 13A and 13B. As described above, the terminals communicate in the
local area network 10 with a SPECTRUM24.TM. network. The network provides a
transparent wireless connection to an Ethernet LAN 16 through multiple access
points 13A and 13B. Preferably, each of the access points is compatible with the
Simple Network Management Protocol (SNMP).

Detailed Description Text (17):
SPECTRUM24.TM. employs a frequency hopping modulation technique that offers a high-
capacity network by using multiple access points which may be connected to an
existing wired LAN backbone. The system employs more than 70 non-overlapping
frequencies which minimize the probability that one cell will operate on the same
frequency at the same time as another cell. The system is designed to work in the 2
to 2.5 Ghz frequency band.

Detailed Description Text (22):
In a preferred embodiment of the present invention, locations 10 and 20 (FIG. 1)
are retail facilities employing self-scanning systems illustrated in FIG. 4. These
systems are also sometimes referred to as self-checkout and self-shopping systems
which terms will be used interchangeably herein. In FIG. 4, the portable terminal
100 communicates over a wireless communication network 130. In the illustrated
embodiment, the multi-access point 13 (FIG. 1) is incorporated into a controller
150 which functions as the central host to the portable terminal 100. The
controller 150 is coupled to an in-store point of sale (POS) controller 160 which
may be an IBM 4680/90 or similar computer which includes price information and
maintains statistical data as to purchases, discounts, inventory, and promotional
information. Although these controllers are shown as physically separated items,
they could also be logical distinct software items in a single hardware device.

Detailed Description Text (23):
The in-store controller 160 is coupled to the retail facilities point-of-sale
terminals 170. The point-of-sale terminal 170 is used to receive payment from
customers after they have selected items for purchase and to process customers not
using portable terminals to collect items for purchase. Payment may be made by
electronic means via a card swipe reader 175 or through a standard cash/check
transaction.

Detailed Description Text (27):
To use the system, a customer proceeds to an entrance unit 220 and inserts their
customer card 210. A card reader on the entrance unit 220 reads the information
stored on the card and checks with the central storage system to confirm that a
corresponding customer data file exists and that the customer is authorized to use
the system. Once system approval is obtained, a display unit 224 on the entrance
unit 220 instructs the user to proceed to a designated area of a dispenser unit 230
to retrieve a designated data collection unit such as portable terminal with an
integrated bar code reader 240. Although not shown, the self-checkout system could
also be provided with an entry gate which is activated to permit entry of the
customer upon the assignment of the bar code reader 240 and activation of blinking
lights 233 located on the side of and above the dispenser which directs the
customer to the location of the bar code reader 240 in the dispenser units. These

entry and directional systems are especially necessary in large stores having a
high number of dispenser units.

Detailed Description Text (28):
The bar code reader 240 is provided with a flashing light 242 to assist the
customer in retrieving it after it has been assigned to the customer. The flashing
light 242 is activated by the central processor (shown in FIG. 2) after it has been
assigned to the customer and the assignment is recorded in the customer's data
file. In an alternative embodiment, the bar code reader is further provided with an
audible signal generator to assist the user in finding it in the terminal dispenser
and a visual display for displaying either the customer's name or some other form
of customer identifiable code. Although not illustrated, the dispenser system for
the portable terminals could also take the form of a vending machine type dispenser
or rotatable dispenser racks which rotate to provide a customer access to a
selected terminal.

Detailed Description Text (29):
The hand-held bar code reader 240 is stored in one of a plurality of slots 234 in
the dispenser unit 230. Each of the slots is physically and electronically marked
and may be provided with locking means for locking the bar code reader 240 in place
until the bar code reader is assigned for use to a customer. The physical marking
is used to direct the customer to the proper location on the dispenser, i.e.,
location "A9," and the electronic marking is provided as a means for identifying
the location of the bar code reader by the central processor. The electronic means
may comprise a bar code located on the terminal dispenser 230 such that when the
bar code reader 240 is locked in place, the bar code can be read by the bar code
reader 240 and communicated to the central processor. Once the bar code reader 240
is assigned to a customer, the locking means is disengaged. In the event the bar
code reader is not removed from the slot 234 after a predetermined time period, it
is again locked and the customer data file for the customer to whom it was assigned
is updated to reflect that the customer did not take possession of the reader
within the allotted time period.

Detailed Description Text (31):
Once a customer has been issued a bar code reader 240, the customer proceeds
through the retail facility and uses the bar code reader 240 to record purchases.
Preferably each item is either coded with a code which is recognizable to the bar
code reader, or in the case of produce which is sold by weight, is provided with a
machine for generating an adhesive bar coded ticket after the produce is weighed.
Upon scanning of the code on a selected merchandise item 260, a display 244 on the
bar code reader 240 displays product information such as price, product name,
quantity and nutritional information. In a preferred embodiment of the present
invention, the bar code reader 240 acts as a dumb terminal with radio frequency
communication means. In such case, all information is stored in a central location
and the bar code reader 240 simply sends and receives data from the central
location.

Detailed Description Text (33):
Once the customer has completed their product selection, the customer returns the
bar code reader 240 to the dispenser unit 230 where it is placed in an open slot
234. Upon return of the bar code reader 240, information collected with the bar
code reader 240 is processed by a central processing unit and a ticket for the
items is issued to the customer from a printer 232 which is located near or on the
dispenser. The returned terminal also transmits its terminal identification code
and the address of the slot into which it has been inserted for tracking by the
system controller 150. In an alternative embodiment of the present invention,
rather than issuing a ticket at the terminal dispenser location, a card reader and
data entry device 175 are provided at the cash register 170. The customer may then
enter their customer card, with or without an authorization pin number, at the cash
register location.

Detailed Description Text (36):
Recognizing that some goods may not be scanned due to coding damage or other
issues, a customer may proceed to a manned checkout station such as POS terminal
170 for the addition of items to their receipt. At such point, additional payment
may need to be made using traditional payment schemes, or if the central processing
unit is being used to provide a debit function, customer card and pin code
information may need to be entered at the checkout facility. After all items are
selected and the transaction is complete, the customer's data file is updated in
the central processing unit to reflect the customer's shopping activities.

Detailed Description Text (39):
In a preferred embodiment, each customer who uses the system has an associated data
file stored on the central host including a customer preference list. Thus, when a
customer is issued a portable terminal 100, the central host creates a transaction
file for the customer to track the customer's shopping history and also downloads
preselected preferences. Such preferences may be collected/activated when the
customer signs up for the system or may be added or modified later through a
customer service desk or kiosk (not shown) which is connected to the central host
150. The preference list may be stored on a computer database or on the customer's
identification card.

Detailed Description Text (70):
(16) frequent shopper point level, including those from partner companies (e.g.,
Blockbuster and 7-11)

Detailed Description Text (71):
A user selects which, if any, of the following categories of information they would
like to activate during their shopping transaction. Certain of the preferences may
be activated by the scanning of certain items. Examples of such preferences are
selections (1), (2), (3), (4), (5), (6), (7), (8) and (9). For instance, if a
customer has activated items (1), (2) and (5), the customer's scan of a pint of
frozen yogurt may prompt the customer that the product has a certain amount of
cholesterol and calories per serving and that a cheaper per serving alternative for
the same brand is available in a one-quart container.

Detailed Description Text (73):
In the preferred embodiment of the present invention illustrated in FIG. 4, this
information is downloaded to the portable terminal 100 over the wireless network
130. The portable terminal is a DOS or Windows.TM. operating system having a
browser type graphical user interface. Data displayed on the terminal's display
will include "links" to other information. Accordingly, when a "fat content" value
is displayed on the display, the "fat content" indicator is underlined and
highlighted to indicate that the selection of the "link" will retrieve additional
information. If the link is activated by navigation keys 106 (or by touching the
selection if using a touch sensitive display pad) the portable terminal will
retrieve additional data through the controller 150. The data, such as recommended
daily amounts, alternative products with lesser fat contents, etc. may be stored at
the controller, in which case, the relevant information is downloaded directly to
the portable terminal. Alternatively, the "link" represents a data file stored at a
remote source such as the manufacturer's web page, in which case the controller 150
sends the request over a wide area network and retrieves the data and routes the
data to the portable terminal. The link may also include embedded passwords and
data request commands required by the remote server for retrieval of the
highlighted data field.

Detailed Description Text (76):
FIG. 7A illustrates the initial screen of a portable terminal upon retrieval of the
unit. As illustrated in FIG. 7A, a generic message is displayed to each user which
includes a message regarding a Holiday Special: Pumpkin Pies. The item is

underlined indicating that the selection may be activated to retrieve additional
information. In this case, although not shown, the information retrieved would
indicate the price and size of the pumpkin pie special, the location within the
store where the pies are located and another link marked "Additional Specials".

Detailed Description Text (82):
Each unit is provided with a unique IP address. A consumer who sends out audio data
or an assistance request may receive audio assistance. In a preferred embodiment, a
consumer selects the help link associated with any of the selection keys, as
illustrated in FIGS. 7B and 7E, or selects an audio link as illustrated in FIG. 7D.
This selection generates a help request command to the controller which forwards
the request to a service desk, which may be located at a point-of-sale terminal
location 170. Once the clerk responds to the message request, the message request,
the clerk opens a voice channel with the consumer which provides for a telephone
type communication. Although the data is transmitted using packed data
communication techniques using the portable terminal IP address, the communication
networks described above provide for adequate throughputs to establish a real time
communication link. Thus, if a consumer needs assistance in retrieving an item from
a top shelf or has injured himself, he can communicate his message directly to a
customer service attendant.

Detailed Description Text (84):
The 6805 chip 310 sends and receives packets of data between the CT8015 DSP chip
320 and the serial port 305. Packets received from the CT8015 on the terminal's CPU
via the serial port 305. The user interface software is designed to identify the
selection of an IP address on the display. Alternatively, the user interface 301
could simply send a telephony request message and wait for a telephone
communication channel open command to be received from the controller over the
wireless communication link.

Detailed Description Text (86):
The two-way audio system of the present invention permits retail facilities to
transmit emergency broadcast messages on the portable terminal and permits
customers to respond quickly. For instance, inquiries as to a lost child could be
made by a parent and retransmitted to all other users in the store or to a service
attendant, located near the store exit who can ensure that the lost child is not
permitted to leave the facility. Moreover, the phone system permits facilities
having multiple locations to use service desk assistants located at a central
location to service multiple locations. A store need not set up a telephone help
desk at each location. In addition, the telephony application could also be
implemented to provide (i) customer notification upon the availability of an
ordered item (i.e., deli order is ready), (ii) place orders for out-of-stock items,
and (iii) identify the location of all store shoppers and employees.

Detailed Description Text (88):
The self-shopping embodiment of the present invention permits broad in-store
marketing programs including pinpoint marketing, coupon distribution and coupon
tracking. An example of a preferred marketing system employed in a system of the
present invention is described below.

Detailed Description Text (89):
The application of an electronic coupon system has been previously described above.
In the event electronic coupons are not available for a particular product, the
system, i.e., software on the central host, could be provided to identify the
existence of other couponing or discount system applicable to a scanned product.
For example, some retail facilities provide coupon dispensers at entrance points
and in aisles. If such a coupon system exists for a scanned item, the controller
generates a link for the scanned item identifying the nature, availability,
conditions, locations and amount of savings generated by the coupon, and the
customer may then proceed to the location and physically retrieve the coupon. A

coupon redemption center may then be provided for expedient conversion of the coupon into the customer's transaction file. Alternatively, the coupon can be presented at a checkout register or, if the coupon is provided with a machine coded label, i.e., bar code, it may be scanned with a portable terminal which will register the coupon on the system and apply it to a previously scanned or subsequently scanned item. This pre-scanning of coupons may be performed by a customer at the store or at home using a home scanner (such as one attached to the customer PC 45) and downloaded into the customer's data file at the facility.

Detailed Description Text (93):
In another embodiment of the present invention, the portable terminal is used to present advertising messages to the consumer. The central host will detect items scanned by the portable terminal having an associated advertising message or video display. Thus, when a consumer scans a "Coke" can, he may receive the voice message "COKE IS IT." Alternatively, the central host may also maintain a file of the customer's prior purchase records, and detect correlation of purchased items. If such a correlation to a scanned item is identified, the portable terminal may be prompted to display a message reminding the consumer to purchase other associated products or products usually purchased by the consumer but not currently selected. For example, if a consumer purchases hot dogs, the central host may send a message to the portable terminal, "Do you need hot dog buns and mustard" The message would be dependent on the customer's transaction list and prior purchasing history, a positive, response selected, and if the display would show a new page providing cost and location data. In addition, if the customer's prior purchase record indicates that the customer usually buys charcoal with hot dogs or hamburgers, the terminal may also ask the customer if he needs "Charcoal." Again, the prompted items would be provided with a link to an informational page to provide cost and location. The item prompts would also be turned off in the event the central host determines that the product is out of stock.

Detailed Description Text (95):
In another preferred embodiment of the present invention, the central host also provides for the uploading of customer shopping lists. Thus, a customer may generate a shopping list and Email the list to a predetermined secure (i.e., password protected) Email address. The customer's Email address would be predetermined and automatically associated with a customer's file at the shopping facility. When the customer is assigned a portable terminal, the portable terminal's initial prompt will also include a message link indicating that a message has been received for the customer. The selection of the link would cause the Email message to display on the portable terminal.

Detailed Description Text (96):
In a further embodiment of the present invention, the central host delivers to the customer via an Email address on a customer's PC 45 (FIG. 1) a list of previously purchased items, or in the alternative, the central host makes available on a customer accessible but password protected web page the customer's prior purchase records and a complete listing of available items at the store. As described in FIG. 10, the customer may then select items for inclusion on a customer specific shopping list by checking specific items which are to be purchased and the quantity required for purchase. By using the item selection method, i.e., selecting from a store's list of available goods, the list may be used to prompt customers on their next visit to the store the exact location and price of the selected items on the list by ensuring that the notation used by a customer for items selected for purchase will match the product identifiers used by the central host. The above described shopping list system also permits for home delivery of items because of the assurance of a match between items selected by a customer and items including brand, quantity and price available at the facility.

Detailed Description Text (97):
In a preferred embodiment of the present invention, the customer selection of items

is made through a graphical use interface which simulates a store layout, i.e.,
aisles with items in them as they are stacked within the store. This permits the
user to find items they know are located in certain aisles of the store. Once the
customer has completed their selection the shopping list is also provided with a
general comment section to provide special instructions to the store or reminders
to themselves. It is preferred that the central host acknowledge receipt and
recognition of selected items by Email response or telephone call to the customer's
location. In the event of an Email order for home delivery, it is also preferred
that the customer receive a telephone call to ensure that the customer has in fact
placed the order and to provide credit card verification information if the order
is to be paid in the form of an electronic fund transfer.

Detailed Description Text (98):
Once the customer's order has been placed electronically, a store attendant using a
portable terminal of the present invention is prompted to collect items for
delivery to the specified customer. The attendant collects and scans items which
have been selected for purchase. In the event a product is not available because it
has been depleted subsequent to the order being placed, the attendant is provided
with an out-of-stock marker. The marker could be a bar coded command on a bar coded
command sheet provided to the attendant which could include scannable instruction
codes such as "Begin new client collection," "Out of stock item," "Suspend client
collection," "Cancel client collection" and "Scan bag for client." For example, in
the event the item selected by the customer for purchase is out-of-stock the bar
coded command indicating that the item is out of stock is scanned by the attendant.
The shopping list delivered to the customer is then modified to indicate the item
has not been included for delivery to the customer. In a preferred embodiment of
this system, the customer may mark items as "essential" or "required for delivery"
so that key ingredients (as in recipes) are not omitted which would make the rest
of the requested items unnecessary. Thus, if a customer selects items on a list
based on a recipe which is suggested on the store's home page, and a critical
element is not available, all the items on the recipe may be withheld. This
"requirement" condition can be tagged to the complete list or simply a portion of
the list using any number of methods which would become obvious to one skilled in
the art subsequent to reading this description. Essential items could also be
linked to or marked with alternative products.

Detailed Description Text (99):
As a result, a customer's shopping list will be subdivided into a series of lists
with related items which a customer may redesignate for its own purposes. Once the
attendant has completed the collection process, the attendant prints out customer
stickers which are placed on bags used to transport a customer's selected items to
the customer's delivery location. The attendant may be provided with a portable
printer which is commercially available from Symbol Technologies, Inc.

Detailed Description Text (100):
In order to improve on the efficiency of the delivery system described above, it is
preferred that the customer include a delivery time window and location in their
delivery requests. Once these entries are entered into the central host, the
central host will order the collection of home delivery orders so as to provide for
the delivery to customers located in proximity to each other in both location and
delivery time periods. In addition, a customer's shopping list may also be
reorganized by the central computer to account for efficient collection of goods
for the attendant relevant to current location. Thus, all items in the same aisle
will be grouped together for collection by the attendant and once a location within
the aisle is identified by the scanning of a current or prior article, the order
will be reordered to provide for the ordered selection of goods within the aisle.
This dynamic reorganization of items allows for real world situations in which an
attendant may be called away for a moment or simply proceeds in an inefficient
direction.

Detailed Description Text (103):
The herein described embodiments of the present invention are intended to provide
the preferred embodiments of the present invention as currently contemplated by the
applicants. It would be obvious to anyone of skill in the relevant art based on the
herein described examples without straying from the present invention that numerous
modification could be made to the described preferred embodiments. For example, the
portable terminal could take any number of forms including wearable solutions
available from Symbol Technologies, Inc. and larger portable solutions described
herein. In addition, the graphical user interface could also be implemented as a
number of different presentation schemes. Moreover, although many of the preferred
embodiments have been described in the context of a self-scanning supermarket
application, the system could be used in any type of self-scanning application. For
example, in a clothing store, the portable terminals could be used to provide
information pertaining to recommended accessories which would match a selected item
by providing cost, location and even a display of how two or more items would
appear as one outfit. Accordingly, the herein described embodiments are merely
exemplary in nature and are not intended to represent every possible embodiment of
the present invention.

Current US Cross Reference Classification (4):
705/27

Other Reference Publication (1):
The Wireless Store, The Strategic Enviroment for Retailing's Future (Symbol
Technologies Brochure) Jan. 1992, p. 15.

CLAIMS:

1. A system for presenting an item of information to a customer corresponding to a
selected product having an associated machine coded label, said system comprising:

a product information file including the item of information corresponding to the
selected product:

a portable terminal having an integrated machine code reader for reading the
machine coded label, a display and a wireless radio:

a product information discriminator for selecting the item of information from the
product information file corresponding to the selected product and delivering the
item of information to the display of the portable terminal upon the reading of the
machine coded label on the selected item with the machine code reader on the
portable terminal, whereby the reading of the machine coded label on the selected
item with the machine code reader on the portable terminal results in the
presentation of the item of information to the customer using the portable data
terminal; and

a deactivation controller for deactivating the product information discriminator
from delivering the item of information to the display of the portable terminal.

2. The system of claim 1 further comprising a customer data file including a list
of products relating at least in part to a customer's prior purchasing history, and
the customer data file and the product information file are stored on a central
controller coupled to a radio access point for communicating with the portable
terminal over a wireless communication network.

3. The system of claim 2 wherein the product information discriminator is a
software program on the central controller and the item of information is delivered
to the display of the portable terminal over the wireless communication network.

4. The system of claim 2 wherein the customer data file, the product information

file and the product information discriminator are located on the portable terminal and are periodically updated by a central server with the wireless radio.

11. The system of claim 2 wherein the wireless radio on the portable terminal is a spread spectrum radio working in the 2.4 Ghz frequency band.

☐ [Generate Collection] [Print]

L2: Entry 1 of 1   File: USPT   Nov 26, 2002

US-PAT-NO: 6486768
DOCUMENT-IDENTIFIER: US 6486768 B1
** See image for **Certificate of Correction** **

TITLE: Cart return loyalty credit system

DATE-ISSUED: November 26, 2002

INVENTOR-INFORMATION:

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APPL-NO: 09/ 153912   [PALM]
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PRIOR-ART-DISCLOSED:

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[Search Selected] [Search ALL] [Clear]

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ART-UNIT: 2635

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ABSTRACT:

A system and method for providing an incentive to a cutomer of a store to return a shopping cart to a cart return location. The cart return location, such as a cart corral, has a plurality of detection loops at an entrance to the corral. The system detects a change in inductance of the loops when a cart is returned to the cart corral and generates a cart return signal, which is indicative of a returned cart, in response to the change of inductance. The system determines wheather a cart is being removed from or returned to the cart corral by use of the multiple detection loops. Visual and/or audible feedback indicative of an action may be provided to the customer.

43 Claims, 16 Drawing figures

L30: Entry 1 of 4   File: USPT   Nov 26, 2002

DOCUMENT-IDENTIFIER: US 6486768 B1
** See image for Certificate of Correction **
TITLE: Cart return loyalty credit system

Abstract Text (1):
A system and method for providing an incentive to a cutomer of a store to return a
shopping cart to a cart return location. The cart return location, such as a cart
corral, has a plurality of detection loops at an entrance to the corral. The system
detects a change in inductance of the loops when a cart is returned to the cart
corral and generates a cart return signal, which is indicative of a returned cart,
in response to the change of inductance. The system determines wheather a cart is
being removed from or returned to the cart corral by use of the multiple detection
loops. Visual and/or audible feedback indicative of an action may be provided to
the customer.

Application Filing Date (1):
19980916

Brief Summary Text (3):
The present invention generally relates to a reward system and method for wheeled
vehicles, and more specifically, to a way to encourage the return of a shopping
cart to a cart return location.

Brief Summary Text (5):
Wheeled shopping carts are conventionally provided by supermarkets, discount stores
and other retail stores for the convenience of shoppers such that relatively large
loads of goods can be collected, paid for and then wheeled out to the shoppers
vehicle for unloading. A few shoppers will voluntarily return a cart to a central
cart return location, such as a cart corral. Typically, however, the shopper leaves
the cart in the vicinity of where the vehicle is parked. The empty cart must then
be collected by store personnel and returned to the store for subsequent use.
Substantial costs may be incurred associated with the process of retrieving the
carts from the far corners of the site and collecting them into a central cart
corral or a cart line in front of the store. A typical store may spend from one to
six man-years in the collection process, and incur additional indirect costs
associated with injury and disability claims. Worldwide, labor costs of cart
collection add up to millions of dollars.

Brief Summary Text (6):
Additionally, some carts may be removed from the store parking lot. For example, a
shopper without a vehicle may use the cart to transport goods back to his home and
then abandon the cart. This can result in permanent loss of the cart. Furthermore,
thieves may intentionally abscond with carts for the purpose of later resale to
other retailers. Loss of shopping carts results in substantial financial loss to
the retailer, since each cart is a relatively expensive piece of equipment.

Brief Summary Text (7):
According to the Food Marketing Institute (FMI) in one recent year, U.S. retailers
annually lost approximately 11% of their carts with a value of $185 million, plus
another $117 million in cart retrieval expenses. Because it is common for shoppers

to "borrow" carts to transport their purchases home or to a transit stop, retailers must contract for regular cart retrieval services. Retrieval contractors comb their neighborhoods several times per day or week, at substantial cost to the retailer. The total impact is typically thousands of dollars per site per year. Once off-site, carts are often taken great distances, experiencing worn wheels and other damage. Rough handling during the collection process often further damages those carts that are retrieved. Extra cleaning and repair that may be required following retrieval could easily add thousands of dollars of additional expenses per store per year. Furthermore, to compensate for carts that are off-site, retailers typically maintain excess cart inventories, often 10% to 20% over their actual need, to ensure that enough carts are available during peak shopping hours. At some sites, the total of all these costs may exceed $100,000 per site.

Brief Summary Text (8):
Numerous proposals have been made in the past for devices to deter shoppers or others from removing carts from the immediate vicinity or parking lot of a store. Such devices typically include some type of wheel locking mechanism which is activated when the cart crosses a boundary of some type around the perimeter of the parking lot or travels a fixed distance from a store exit. However, these concepts do not provide incentives to discourage removal of a cart from the lot or to return the cart to the cart corral.

Brief Summary Text (9):
One method increasingly used by retailers to encourage repeat business is a frequent shopper program, also known as a reward or loyalty program. In such a program, a customer is typically issued a card having a unique customer identification code. The card is issued after the customer provides identifying information and usually some demographic information to the issuing store. This frequent shopper or reward card may be of various types, such as magnetic stripe, bar-code, or smart card technology having a non-volatile memory (proximity, and so forth).

Brief Summary Text (10):
According to In-Store, the newsletter of In-Store Marketing & Business, a current survey of frequent shopper or reward program penetration shows that there are now more than 7,750 supermarkets in the United States that have card-based frequent shopper programs, which represents about 26% of all supermarkets. This is up from 19% (5,867 stores) of total United States supermarkets in the 1st Quarter of 1997. The growth in loyalty card programs is similar throughout the developed countries of the world. A supermarket is defined as a grocery store with more than $2 million in annual sales.

Brief Summary Text (11):
The use of these reward programs continues to grow at a rapid pace. Fifty chains with twenty or more stores and seventy-five retailers with fewer than twenty stores now have or are in the process of rolling out frequent shopper programs. Over 72% of the frequent shopper store count is made up by chains with more than $2.0 billion of annual sales. The percentage of frequent shopper penetration now represents 22.5% of All Commodity Volume (ACV) in the United States, which is up from 17.4% in the first quarter of 1997. It is estimated that 3,600 additional supermarkets will add frequent shopper programs soon, which would mean that about 38% of all supermarkets will have a reward program. Similar growth in loyalty card programs may be anticipated throughout the developed countries of the world.

Brief Summary Text (12):
ACNielsen performs an annual "Frequent Shopper Programs" study. The ability to use a frequent shopper or loyalty card was cited as more important by card holders than every-day low pricing or customer service. When card holders initially joined their shopper card programs, savings was cited as the primary reason by nearly 75% of card holders, with check cashing the number two reason at 15%. Today, many card

holders have had a frequent <u>shopper</u> card over 12 months, and savings continues to be the primary reason for card usage. Over 50% of the card holders are primarily looking for special deals on products. Although the most often cited reason for <u>shopping</u> in a particular store is still <u>location,</u> the ability to use a frequent <u>shopper</u> card ranked third in importance, next to <u>location</u> and store deals.

<u>Brief Summary Text</u> (14):
A system and method is desired that would enlist the help of customers in the cart collection process. To accomplish this, such a system and method would elicit supportive behavior of a <u>shopper</u> by providing incentives and rewards to return a <u>shopping</u> cart to a cart return <u>location</u>. These incentives would provide a reward to the <u>shopper</u> for returning a <u>shopping</u> cart and to encourage repeat business. The system and method would thus provide direct benefits to both the customer and the store operator.

<u>Brief Summary Text</u> (15):
It is also desired to have a <u>shopping</u> cart return system that can be associated with a frequent <u>shopper</u> or rewards program. Such a cart return system would be able to integrate with the existing store infrastructure so as to minimize store expenses and not require customers to learn a totally new system or new procedure.

<u>Brief Summary Text</u> (19):
In another aspect of the present invention there is a cart return system for use by a store utilizing a computer, the system comprising a detection loop arranged at the entrance to a cart return <u>location</u>; a loop oscillator circuit connected to the detection loop; and a processing circuit, connected to the loop oscillator circuit, being capable of detecting a change in inductance of the loop and identifying a cart return condition in response to the loop oscillator circuit, wherein the processing circuit is capable of providing a customer identification code to the computer.

<u>Brief Summary Text</u> (20):
In another aspect of the present invention there is a method of providing an incentive for a customer of a store to return a <u>shopping</u> cart to a cart return <u>location</u> having a detection loop at the entrance to the cart return <u>location,</u> the method comprising detecting a change in inductance of the loop; generating a cart return signal, which is indicative of a returned cart, responsive to the change of inductance; obtaining a customer identification code <u>proximal</u> in time to the cart return signal; and sending the customer identification code to a computer.

<u>Brief Summary Text</u> (21):
In yet another aspect of the present invention there is a cart return system, comprising a detection loop arranged at the entrance to a cart return <u>location</u>; a loop oscillator circuit connected to the detection loop; and a processing circuit, being capable of detecting a change in inductance of the loop and identifying a cart return condition in response to the loop oscillator circuit, wherein the processing circuit is capable of providing a customer identification code.

<u>Brief Summary Text</u> (22):
In still another aspect of the present invention there is a method of providing an incentive for a customer of a store to return a <u>shopping</u> cart to a cart return <u>location</u> having a detection loop at the entrance to the cart return <u>location,</u> the method comprising detecting a change in inductance of the loop; generating a cart return signal, which is indicative of a returned cart, responsive to the change of inductance; obtaining a customer identification code <u>proximal</u> in time to the cart return signal; and storing the customer identification code in a memory.

<u>Brief Summary Text</u> (23):
In yet another aspect of the present invention there is a system of providing an incentive for a customer of a store to return a <u>shopping</u> cart to a cart return

location having a detection loop at the entrance to the cart return location, the system comprising means for detecting a change in inductance of the loop; means for generating a cart return signal, which is indicative of a returned cart, responsive to the change of inductance; means for obtaining a customer identification code proximal in time to the cart return signal; and means for storing the customer identification code.

Detailed Description Text (3):
The purpose of the cart sensor system is to sense or register the return of the cart (the preferred customer behavior) and to enable the credit granting system whereby the customer receives credits or points or other benefits in return for their replacing the cart in the designated place.

Detailed Description Text (4):
The detailed description is organized into the following sections: Magnetic Stripe Cards and Readers, Shopping Carts, Physical Layouts of Cart Corral Sensors and Card Reader/Electronics Station, Cart Detector Circuit and System Electronics, Software Functions, and Store Infrastructure.

Detailed Description Text (12):
As the name implies, magnetic stripe readers only read already-encoded magnetic stripes and they are used almost exclusively on-line (attached to a personal computer (PC) terminal or cash register). In a retail store, the reader and computing device form a part of a point-of-sale (POS) system. They are normally interfaced with a computer device either through an RS-232 serial connection, or via a keyboard wedge. This latter interface is most common in PC applications. In this case, the card reader shares the PC's keyboard port and all scanned data are accepted by the PC as if they were keyed in. Serial readers almost always require an external AC/DC power supply. Keyboard wedge readers "borrow" power from the keyboard port.

Detailed Description Text (15):
Shopping Carts

Detailed Description Text (16):
Shopping carts are provided by a variety of retail businesses to permit their customers to easily collect and move their purchases for transfer to their vehicle. There are several different types of shopping carts available in various sizes and configurations including all metal carts, metal framed carts with plastic baskets, metal with plastic coatings, and some made almost entirely of plastic.

Detailed Description Text (18):
With the magnetic card technology in mind, and referring to FIG. 1, one embodiment of a portion of the cart return loyalty credit system 100 will be described. One possible embodiment of the cart sensor is a set of inductive loop sensors 102a and 102b buried in the pavement of a parking lot by cutting slots in the pavement, installing the wires, and filling the slots with paving material such as asphalt. Each loop sensor 102 may be two loop turns of 14 gauge stranded wire in one embodiment. The loop sensors 102 are located between vertical poles or members 104a, 104b and 104c defining one or more distinct lanes 106a and 106b for carts to pass through on a cart path, e.g., path 108. Optionally, the sensors 102 could be located at the entrance(s) to existing cart corrals. One or more customer card readers 110 is/are located nearby, optionally on top of one of the poles 104 in a housing also containing the system's electronics 112. Note that one or more of the poles 104a and/or 104c may be omitted. Furthermore, the system electronics 112 may be mounted on one of the other poles 104a or 104c. Optionally, the loop sensor coils 102 can be built into a flat, thin, rugged plastic case placed directly on the pavement surface, having one or more lanes and sets of coils. A connector 114 connects the electronics unit 112 to a store computer, as will be discussed in conjunction with FIG. 16. Optionally, the electronics unit could use wireless

techniques, such as a Proxim RF Ethernet LAN system, to connect to the store computer.

Detailed Description Text (19):
Referring to FIG. 2, the sensor loop configuration shown in FIG. 1 will be described. The loop configuration is illustrated with two separate insulated wire coils 102a and 102b of one or more turns each, adjacent to each other. As a shopping cart passes over this pair of loops, a change in inductance is first detected in one coil, then the other. Which coil "sees" the cart first indicates the direction the cart is moving, i.e., in or out of the cart corral. The wires from these coils run underground and then may run up to the electronics housing 112 (FIG. 1).

Detailed Description Text (24):
Referring to FIG. 8, a perspective view of the sensor loop configuration for FIGS. 6 and 7 will be described. The loop configuration utilized in FIGS. 6 and 7 is two coils nearly the full height and full inside width of the pole, for maximum sensitivity. Of course, the height and width of the coils may vary from one application to another. The two coils are angled from each other, in this example, about 30 degrees. The difference in angles allows one coil to detect the shopping cart before the other, and hence, the system can determine if the shopping cart is moving in or out of the cart corral.

Detailed Description Text (25):
Referring to FIGS. 9 and 10, a fourth embodiment of a portion of the cart return loyalty credit system 100 will be described. In this embodiment, a wide array 150 of inductive loops 102a-102l is molded into a flat plastic panel 152 placed on the pavement surface. Two poles 104 or other guides or markings cause shoppers to return carts over this array 150, but there is a large width between the poles 104, which permits for easy access for shopping carts. The array 150 of individual inductive loop sensors 102 allows the system electronics 112 to track the movement of several carts at once, and to track carts not traveling straight across the sensor. FIG. 9 illustrates one possible configuration of the array 150, among many. Here there is some overlap in width between the coils 102 to increase sensitivity and eliminate "dead zones" (areas of low sensitivity). In one embodiment, a single card reader 110 is used and is possibly integrated with the system electronics unit 112.

Detailed Description Text (27):
Referring to FIG. 11, a fifth embodiment of a portion of the cart return loyalty credit system 100 will be described. In this embodiment, individual radio frequency (RF) identification (ID) tags 162 are used on each shopping cart 160. The RF ID tags each wirelessly transmitting 164 a unique serial number. When returned to the proximity of the cart corral, electronics unit 112 and card reader 110, the system detects the return of the cart 160 by its ID number through coded RF signals.

Detailed Description Text (29):
Referring to FIG. 12, one embodiment of a cart detector circuit 200 of the cart return loyalty credit system 100 will be described. In this embodiment, the shopping carts are detected (in cases not using RF ID tags) by a proximity detector using an inductive loop sensor and an oscillator. The circuit of FIG. 12 uses a comparator circuit 202, a 1 kOhm, 1/4 Watt resistor 204, and two 1.0 .mu.F film capacitors 206 and 208 to form an oscillator with the loop 102. In one embodiment, the loop is two turns. The presence of the metal in the shopping cart 160 (FIG. 11) causes a slight change in the frequency of the oscillator. This frequency is monitored by a small microcontroller integrated circuit (IC) 210, and if a sufficient change is detected, an output signal 212 indicates the presence of a cart by this loop.

Detailed Description Text (37):

The flowchart shown in FIG. 14 is one possible embodiment of the cart return detection 300. The symbols A and B represent the outputs of two loop detectors (such as for the embodiment shown in FIG. 3) in the flowchart for the cart return detection function 300 in FIG. 14. The symbol A represents the first loop to be passed by a returning cart and the symbol B represents the second loop. Beginning at a decision state 302 of FIG. 14, function 300 is at a ready condition for a shopping cart. Function 300 periodically checks to see if loop A is on, i.e., a cart has been detected. If not, function 300 proceeds to a decision state 304 to determine if loop B is on. If loop B is determined (by a cart detector 200) to not be on, function 300 proceeds back to decision state 302 to again check if loop A is on. If a determination is made at decision state 302 that loop A is on, function 300 moves to state 306 and waits for an period of 50 msec in one embodiment. The wait period should help if several carts are passed through in rapid succession, and should help reject electrical noise that triggers both A and B sensors simultaneously. Continuing at a decision state 308, function 300 checks to see if loop B is on. If loop B is on at the completion of the wait period of state 306, the cart is deemed to be coming out of the cart corral backwards and function 300 proceeds to state 314. At state 314, function 300 waits until both loops are both off. Proceeding to state 316, function 300 then waits a predetermined time interval, e.g., ten seconds in one embodiment, before moving back to state 302 to be ready to check for loop A again.

Detailed Description Text (45):
Referring to FIG. 16, the combination of the cart return loyalty credit system 100 with a store network 400 will be described. In one embodiment, the system 100 is integrated with an existing frequent shopper program for a particular store or chain of stores. Alternatively, the system 100 could be incorporated in another reward or sales program such as a prepaid phone card or video rental card program.

Detailed Description Text (46):
In one embodiment, the retailer "collects" a customer's credits and issues them at a point of sale as discounts, freebies, phone card credits, etc. The system may also get manufacturers, e.g., Coca Cola, to give "specials" from time to time in return for credits, thus shifting the cost of credits from the retailer to the manufacturer (e.g., Coke or Coors).

Detailed Description Text (47):
When a customer 402 joins a particular shopping program, a customer ID (reward) card 404 having a customer ID number or code is issued to the customer. This ID code may be encoded on the card 404 as a bar-code, in a magnetic stripe, or stored in the memory of a smart card, for instance. In another embodiment, the store may use identification information on a customer's debit card, credit card, or the account information on the customer's checks, for example, as a customer code so as to avoid having to issue another card to the customer. To maintain security of the code, it could be encrypted at the sensor and control electronics 113 and decrypted by a store or central computer. The store may also allow use of either a debit/credit card, check or a reward card, depending on whether the customer is paying for the purchase by debit, credit, check, or cash. A customer 402 receives frequent shopper or reward credits, points, or the like for purchases, store visits, and other criteria as defined by the particular frequent shopper program. For example, when the customer purchases store products 432 at store A (410), the products are scanned by a scanner 430 at a checkout point-of-sale (POS) location. The customer 402 receives credits based on the purchases to the account identified by customer code on the ID card 404 or other identification as described above, which is scanned or read by scanner 430 or other card input device.

Detailed Description Text (48):
These credits or points, the customer identification, the identity of the purchased products, date and time information are passed on to an input/output interface 422 of the store computer 420. The purchased product information is stored in product

files 424 and the credits are stored in an incentive <u>points</u> file 426 which is
indexed by customer code. Time and date information for the transaction may be
stored for both files 424 and 426. Customer information, such as provided by the
customer when the ID card 404 was issued, is stored in file 428. Information on
products purchased by the customer and other information learned about the customer
may also be stored in the customer file 428.

Detailed Description Text (49):
If the store belongs to a chain (of stores) or is affiliated in some way with other
stores having a frequent <u>shopper</u> program, store A may communicate store data
periodically to a central computer or computer network 440. Store B (442), and
other stores through store N (444) may also communicate with the central computer
440 via a link, such as, for example, a network, a satellite or a telephone link.
The network link may be an intranet, an extranet, or an Internet link.

Detailed Description Text (50):
The actual reward of a particular frequent <u>shopper</u> program may vary between various
businesses and campaigns. One type of reward is a reward certificate, which could
be a voucher for cash or product purchases at the business that issued the reward
card, or the reward certificate could be a negotiable check. Furthermore, an
affinity relationship could be established where the frequent <u>shopper</u> receives
<u>points</u> in another frequent purchaser plan such as airline frequent flyer miles.

Detailed Description Text (51):
By use of the cart return loyalty credit system 100, a customer 402 receives
frequent <u>shopper</u> credits for returning the <u>shopping</u> cart 160 to the store's cart
corral or other designated <u>location</u>. The loop sensors 102, in conjunction with the
cart detectors 200, detect a returned cart 160 and signal the microcontroller 220
of that event. The customer 402 then uses his ID card 404 in the card reader 110,
or card scanner or detector in another embodiment, to provide his customer ID or
code to the microcontroller 220. The microcontroller sends the customer code, date,
time and any other information, such as a cart corral identification code, to the
store computer 420 via the interface line 222. Alternatively, the information may
be sent directly to the central computer 440. The store computer then provides an
acknowledgment signal to the microcontroller 220 so as to notify the customer of a
successful reward credit transaction.

Current US Cross Reference Classification (7):
705/26 .

CLAIMS:

1. A cart return system for use by a store utilizing a computer, the system
comprising: a detection loop arranged at the entrance to a cart return <u>location</u>; a
loop oscillator circuit connected to the detection loop, wherein a frequency is
influenced by moving a cart <u>proximate to the detection loop</u>; and a processing
circuit, connected to the loop oscillator circuit, being capable of detecting a
change in inductance of the loop and identifying a cart return condition in
response to the loop oscillator circuit, wherein the processing circuit is adapted
to provide a customer identification code to the computer, wherein the customer
identification code is unique to each customer and which is input to the system by
the customer.

2. The cart return system defined in claim 1, additionally comprising another
detection loop and another loop oscillator circuit so as to detect a direction of a
cart in the entrance to the cart return <u>location</u>.

9. The cart return system defined in claim 1, wherein the customer identification
code corresponds to a customer who returns a <u>shopping</u> cart to the cart return
<u>location</u>.

10. A method of providing an incentive for a customer of a store to return a shopping cart to a cart return location having a detection loop at the entrance to the cart return location, the method comprising: detecting a change in inductance of the loop when a cart is moved proximate to the detection loop; generating a cart return signal, which is indicative of a returned cart, responsive to the change of inductance; inputting a customer identification code proximal in time to the cart return signal, wherein the customer identification code is unique to each customer; and sending the customer identification code to a computer.

16. The method defined in claim 10, additionally comprising updating a customer loyalty database indexed by the customer identification code with a prespecified number of points associated with a cart return.

17. The method defined in claim 10, wherein the sending comprises wireless signaling between the cart return location and the computer.

18. The method defined in claim 10, wherein the sending comprises wired signaling between the cart return location and the computer.

19. A cart return system, comprising: a detection loop arranged at the entrance to a cart return location; a loop oscillator circuit connected to the detection loop, wherein a frequency is influenced by moving a cart proximate to the detection loop; and a processing circuit, being capable of detecting a change in inductance of the loop and identifying a cart return condition in response to the loop oscillator circuit, wherein the processing circuit is adapted to provide a customer identification code, wherein the customer identification code is unique to each customer and which is input to the system by the customer.

20. The cart return system defined in claim 19, additionally comprising another detection loop and another loop oscillator circuit so as to detect a direction of a cart in the entrance to the cart return location.

27. The cart return system defined in claim 19, wherein the customer identification code corresponds to a customer who returns a shopping cart to the cart return location.

31. A method of providing an incentive for a customer of a store to return a shopping cart to a cart return location having a detection loop at the entrance to the cart return location, the method comprising: detecting a change in inductance of the loop when a cart is moved proximate to the detection loop; generating a cart return signal, which is indicative of a returned cart, responsive to the change of inductance; inputting a customer identification code proximal in time to the cart return signal, wherein the customer identification code is unique to each customer; and storing the customer identification code in a memory.

35. The method defined in claim 31, additionally comprising updating a customer loyalty database indexed by the customer identification code with a prespecified number of points associated with a cart return.

39. The method defined in claim 36, wherein storing the customer identification code in the computer comprises wireless signaling between the cart return location and the computer.

40. The method defined in claim 36, wherein storing the customer identification code in the computer comprises wired signaling between the cart return location and the computer.

41. A system of providing an incentive for a customer of a store to return a shopping cart to a cart return location having a detection loop at the entrance to

the cart return <u>location,</u> the system comprising: means for detecting a change in inductance of the loop when a cart is moved <u>proximate</u> to the detection loop; means for generating a cart return signal, which is indicative of a returned cart, responsive to the change of inductance; means for inputting a customer identification code <u>proximal</u> in time to the cart return signal, wherein the customer identification code is unique to each customer; and means for storing the customer identification code.

42. A method of providing an incentive for a customer of a store to return a <u>shopping</u> cart to a cart return <u>location</u> having a detection loop at the entrance to the cart return <u>location,</u> the method comprising: detecting a change in inductance of the loop; generating a cart return signal, which is indicative of a returned cart, responsive to the change of inductance; obtaining a customer identification code <u>proximal</u> in time to the cart return signal; sending the customer identification code to a computer; and updating a customer loyalty database indexed by the customer identification code with a prespecified number of <u>points</u> associated with a cart return.

43. A method of providing an incentive for a customer of a store to return a <u>shopping</u> cart to a cart return <u>location</u> having a detection loop at the entrance to the cart return <u>location,</u> the method comprising: detecting a change in inductance of the loop; generating a cart return signal, which is indicative of a returned cart, responsive to the change of inductance; obtaining a customer identification code <u>proximal</u> in time to the cart return signal; storing the customer identification code in a memory; and updating a customer loyalty database indexed by the customer identification code with a prespecified number of <u>points</u> associated with a cart return.